Interdisciplinary Minor in Nanoscale Science and Engineering (Nanotechnology) IMNT

Name (please print): ____________________________________________________________________________
(Last)                                                   (First)                                                 (Middle)

Student Number: ___________________________

Primary Major: ___________________________ Expected Major Completion Term: ________________

Required Courses (7 Credits)

_____ UN2600 Fund. of Nanoscale Sci. and Tech. (2)
_____ SS3820 Societal Implications of Nanotech. (2)
_____ Independent Study / Research / Co-op / Enterprise (3) *

* must be nano-related; program approval required

Elective Courses

Choose at least two courses from this list of courses not in your major. Additional courses may be freely chosen from this list to bring the total number of credits from this list to at least 9, giving a total of at least 16 credits for the minor. (Remember that it is also a university requirement that you take at least two courses at the 3000-level or higher not required by your major.)

_____ BA3780 Entrepreneurship (3)
_____ BE3500 Biomedical Materials (3)
_____ BE4700 Biosensors: Fabrication and Apps. (3)
_____ BL1900 Molecular Biology Seminar (1)
_____ BL2100 Principles of Biochemistry (3)
_____ BL2200 Genetics (3)
_____ BL4010 Biochemistry I (3)
_____ BL4020 Biochemistry II (3)
_____ BL4030 Molecular Biology (3)
_____ CH2400 Principles of Organic Chem. (4)
_____ CH3500 Physical Chem. For Env. & Life Sci. (2)
_____ CH3520 Physical Chem. II – Kinetics & Mol. Structure (3)
_____ CH4212 Instrumental Analysis (5)
_____ CH4310 Inorganic Chemistry I (3)
_____ CH4320 Inorganic Chemistry II (3)
_____ CH4560 Computational Chemistry (3)
_____ CH4610 Introduction to Polymer Science (3)

Elective Courses (Continued)

_____ CM4610 Intro to Polymer Science (3)
_____ CM4710 Biochemical Processes (3)
_____ CM3974 Fuel Cell Fundamentals (1)
_____ EE4231 Physical Electronics (3)
_____ EE4240 Introduction to MEMS (4)
_____ EE4240D Introduction to MEMS (4)
_____ EE5470 Semiconductor Fabrication (3)
_____ EE5480 Advanced MEMS (4)
_____ EE6480 Thin Films (3)
_____ EET3353 Sensors, Data Acquisition and Control (3)
_____ ENG3974 Fuel Cell Fundamentals (1)
_____ FW3075 Plant Biotechnology (3)
_____ FW4089 Bioinformatics (3)
_____ MEEM4405 Intro to Finite Element Method (3)
_____ MEEM4640 Micromanufacturing Processes (3)
_____ MET3131 Instrumentation I (3)
_____ MET4131 Advanced Instrumentation and Controls (3)
_____ MY3200 Materials Characterization I (4)
_____ MY3210 Materials Characterization II (4)
_____ MY3700 Electronic, Optical, and Magnetic Properties of Materials (4)
_____ MY4200 Intro to Scanning Electron Microscopy (2)
_____ MY4240 Introduction to MEMS (4)
_____ MY4240D Introduction to MEMS (4)
_____ MY4710 Photonic & Micromech. Mat’l’s & Devices (3)

Credits Required = 16
Total Credits _______
### Elective Courses (continued)

- MY5470 Semiconductor Fabrication (3)
- MY5480 Advanced MEMS (4)
- MY5550 Solid Surfaces (3)
- MY5580 Intro to Scanning Probe Microscopy (2)
- MY6100 Computational Materials Science and Engg (3)
- MY6480 Thin Films (3)
- PH2400 Univ. Physics IV: Waves & Modern Physics (3)
- PH3410 Quantum Physics I (3)
- PH3411 Quantum Physics II (3)
- SS2800 Science, Technology & Society (3)
- SS3650 Intellectual Property Law (3)

Other appropriate electives (including those at the graduate level) may be chosen with written permission by the Nanotechnology Minor faculty advisor. Graduate-level courses may also require permission of the department or instructor.

**Students are encouraged, though not required, to take at least one course from this list related to instrumentation:**

- BE3600 Biomedical Instrumentation (4)
- CH4212 Instrumental Analysis (3)
- MY3200 Materials Characterization I (4)
- MY3210 Materials Characterization II (4)
- MY4200 Introduction to Scanning Electron Microscopy (2)
- MY5580 Introduction to Scanning Probe Microscopy (2)

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**Information and Guidelines**

- Minors require a minimum of 16 semester credit hours. Of these 16 credit hours no more than 6 credit hours may be 1000 or 2000 level courses. For minors exceeding 16 credits, the additional credits beyond 16 may be at any level. Each minor must include at least 6 credit hours of 3000 level or higher courses which are not required for a student’s Major degree program except as free electives.

- Undergraduate requirements and special provisions for each Minor are listed and defined by each academic unit offering the Minor. Minors offered in cross-disciplinary areas must originate in a designated department, school, or multidisciplinary program as recognized by the University.

- Students may not take a Minor with the same title as their Major or Major Concentration.

- A minimum cumulative grade point average of 2.0 is required for courses in the Minor.

- It is recommended that students consider Minors as early as possible in their program of study. Students desiring a Minor should indicate their intent by filing a "Change/Addition of Major/Minor" form with the Office of Student Records and Registration no later than the first semester of their junior year.

- Students desiring a Minor must also file the applicable ‘Minor Audit Form’ with the academic advisor of the department offering the minor two semesters prior to completion of their associated undergraduate degree. The academic advisor will approve and forward the form to Degree Services. Once this Minor Audit Form is on file with Degree Services, any change of intent to pursue the minor must be reported directly to the Degree Services Office, 487-2395. Failure to do so could delay the awarding of the undergraduate degree.

- Any changes to the requirements, e.g. course substitutions, must be indicated and submitted to the Degree Services Office on a "Petition to Alter Degree Requirements" form by the academic advisor in the department offering the minor.

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**Courses listed in this minor have the following prerequisites (shown in parenthesis).**

- MEEM4405 (MEEM3502 and (MA2320 or MA2330) and (MA3520 or MA3521 or MA3530 or MA3560)), PH3410 (PH2400 and (MA3520 or MA3521 or MA3530 or MA3560), CM3974 (CH1100 or CH1110), CH43212 (CH2212 and CH5510 C and CH5511 C), ENG3974 (CH1100 or CH1110), CH3520 (CH1110 and PH2200 C and (MA3510 or MA3160) and PH2200 C), CH3550 (CH1100 or CH1110) and (CH1120 or CH1140) and (MA2150 or MA2160)), CH4660 (CH1120), EE4231 (EE3130), MY2200 (MY2100), CH4200 (CH1120), ME33131 (EE3315 or EE3321), MY3700 (PH2200 or PH2205) and (MA3510 or MA3160) and (MA3520 or MA3550 or MA3521 and MA3521), MY3210 (MY3200), BL210B (BL1040 or BL1050 and (CH1110 or CH1100)), MEEM4405 (MEEM3502 C), CM3974 (CM3510 C), CH4310 (CH5520), EE4240 (EE4240 or MY4240), SS4650 (UN2002), BL4000 (BL1020 or BL1040) and (BL2100 or CH4710), BL4020 (BL1020 or BL1040), BL2200 (BL1020 or BL1040) and (BL2100 or CH4710), MY3540 (EE4240 or MY4240), PH3410 (PH3415), BL4010 (BL1020 or BL1040 or BL2100) and BL2100 and (CH2400 or CH4200) and CH2420, EET3355 (EET111 or EET2230 or EET2311 or EE3030), CH4560 (CH5520), CM4660 (CH1110), SS4200 (UN2002), BE3600 (EE3010 and BL2100 and BL2200), PH2200 (PH2200 or PH2260), MY3210 (MY3200), BL3500 (BL1040 or BE4900) and MY2100 and (MEEM2150 C or ENG2120 C or MEEM2150 C)